

Non-Traditional Actuarial Opportunities

An Honors Thesis (HONR 499)

by

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Abstract

For students preparing to be actuaries, the most commonly known opportunities are traditional roles in insurance and consulting. Professional development at the university level must reflect the demands placed on the careers for which students are preparing for. To be prepared to fill an entry-level actuarial role upon graduation, emphasis is deservedly placed on these traditional roles as well as the exams and intensive analytical background needed to obtain them. However, there is an ever-increasing demand now placed on actuaries to fulfill roles beyond the traditional ones. Soft skills such as leadership and communication are just as important. With a greater scope of demands being placed on actuaries, there exist opportunities beyond the traditional roles which are so strongly articulated at the university level. This thesis discusses academic preparation, some descriptions of what some traditional versus non-traditional roles are, how traditional actuaries become non-traditional ones, and discussion of how students can prepare to get the most out of their career.

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Introduction

This year, being an actuary is the most desirable profession. While not always number one, it is consistently at the top of an annually published list by CareerCast. CareerCast creates this list based on the metrics of physical demands, work environment, income, stress, and hiring outlook (CareerCast 2013). While the desirability of the profession has remained consistent over time, the opportunities available to actuaries are different now than what they have been in the past. As the actuarial skill set is catching more attention, the number of non-traditional roles available to those with some actuarial experience is growing. How the university experience can be geared to such promising, even individualized career opportunities beyond the traditional entry level roles is worth considering. The collegiate experience plays such a significant role in the formative years of young actuaries, and shapes how new professionals are entering the workforce. Currently, to an individual studying to become an actuary, the focus for which jobs are available to them is primarily or exclusively on traditional roles. Opportunities in these traditional actuarial roles are publicized the most at the university level.

Academic Preparation

Actuarial degrees are comprised of classes that prepare students for taking the actuarial exams. As a convenience to students as well as a means to stay competitive, many university programs also offer classes in Economics, Corporate Finance, and Applied Statistical Methods which count as Validations by Educational Experiences, which are required to achieve professional designation in both of the Society of Actuaries and the Casualty Actuarial Society. These Validations by Educational Experiences, when not completed in classes at a university, are in the form of modules, or smaller exams. Additionally, actuarial degrees attempt to keep their students in demand by requiring courses in computer software, computer programming, economics, finance, and accounting. With all the prerequisites and university required classes,

many actuarial majors are at the maximum number of credit hours allowed per major that an institution allows.

When companies are recruiting new talent, emphasis is deservedly placed on the strong analytical background needed, particularly in terms of exam success. The achievement of an actuarial designation occurs after the completion of all exams, a six to ten year commitment. Basic to thorough knowledge of calculus and probability is assumed for these exams. These exams are on Probability and Statistics, Financial Mathematics, Life Contingencies, Models for Financial Economics, and the Construction and Evaluation for Actuarial Models, respectively abbreviated as P, FM, MLC or 3L, MFE, and C (Beanactuary.org). If the candidate is pursuing a designation to become a Property and Casualty Actuary, the exam on life contingencies can be a two and a half hour exam abbreviated as 3L on both life contingencies and statistics. However, exam MLC is valid for both Life & Health and Property & Casualty actuarial designations. Although the preliminary exams can be taken in any order, it is advisable that exams P and FM are taken before MLC or 3L, MFE, and C. For each exam hour of the first five exams, known as preliminary exams, an actuarial candidate is projected to study at least 100 hours in order to be successful. The first five exams range from two and a half to three and a half hours in length, so they would require 250-350 hours of study.

Internships and Full Time Employment

One may ask what kind of job is to be attained after so much studying. At the university level, it is stressed that students can work for a life and health insurance company, property and casualty insurance company, or consulting company. At professional development events, representatives from each of these three kinds of companies are invited to campus to inform students about what they do, and what they look for in potential new hire candidates. Life and health insurance companies provide products to consumers like life insurance and health

insurance. Many life insurance companies also sell annuities. These products ultimately allow getting sick or dying to be less of a financial burden to their policyholders. Property and casualty insurance companies provide insurance on the incidence of property damage or casualty, which can range anywhere from worker's compensation to the risk of getting sued. As a means to insure against very large or catastrophic losses, insurance companies are able to purchase insurance from reinsurance companies. Finally, consulting companies sell their expert advice to their clients so that the cost of managing their business and adapting to change is understood. Opportunities to be actuarial analysts for these kinds of companies are most commonly known and promoted among actuarial students.

When recruiters, the primary liaisons between students and the professional world, are asked about the jobs that are available, they assure students that demand for actuaries is growing. Further, they offer descriptions of the employer's student program including features such as exam fee reimbursement, paid time to study, and bonuses for exam success. Because the achievement of exams is so important to the services that employers of actuaries provide, progress is strongly encouraged and needed for the company's survival. Companies are able to attract, retain, and develop talent that will keep them current and competitive by being generous to actuarial exam takers. When it comes to work outside of the exams and furthering a career, recruiters describe the traditional roles for which they are recruiting. In fact, many companies offer internships in these roles where students can get a chance to experience the kind of work they would receive as an actuary for a company.

An eligible candidate for entry-level employment as an actuarial analyst today is not the same as it once was. From the perspective of a university student, it is now becoming very rare for individuals to 'fall into' the career. It is becoming a deliberate career path which strongly favors those who commit to it sooner rather than later. In the current state, if an actuarial

candidate comes from a school with an actuarial program, a minimum of two exams and some internship experience is expected in order to be considered for a full time position upon graduation. There are few exceptions to this guideline. These expectations for employment are common knowledge to any attentive actuarial undergraduate, as they are communicated clearly by any recruiter or industry professional invited to campus to speak on such matters.

Employers of interns and entry level professionals state their expectations and students and universities respond the best they can. In reflection of the expectations expressed by employers, the environment for actuarial science at the university level is much different today than it was thirty to forty years ago. Even just ten years ago, actuarial majors were not nearly as common, but rather many actuaries earned a mathematics or economics degree and happened into the actuarial field after graduation. Today, it is becoming more common for universities to offer a major with a distinct curriculum for actuarial science majors. Efforts are being made to get the actuarial classes more closely tied to the exam syllabuses than ever before in hopes to enhance student exam success (Actuarial Advisory Board 2011). Today the grounds to be a competitive candidate can be intimidating, with lore of the actuarial candidates from Purdue University who are successful in completing two actuarial exams immediately following their freshman year.

While exams are a significant bulk of what is expected of actuarial candidates pursuing actuarial jobs upon graduation, they are admittedly not the only basis for evaluation. They are perhaps a prerequisite to everything, including another main component companies look for when filling a full time position: internship experience. These are understood by students to be similar, if not the same experience had by new hires at that host company. While earning \$18.00 to \$23.00 an hour in addition to a possible housing stipend, actuarial interns can see if they like the work while furthering their technical skill set. The company hosting the internships also

benefits because they are able to see if the student would be a good fit to work for them. This mutually beneficial experience has become a requirement to gain employment either at the same company where the internship was served, or at another company.

The merits evaluated in order to obtain an internship are exam success, grade point average, some technical skills such as experience with Microsoft Excel, campus involvement, leadership, presentation skills, people skills, and an articulate interview. Success in these internships requires attention to detail, quick learning, and professionalism. While exam success is a key component to get in the door, so is one's ability to fill a traditional actuarial role. The internships intend to teach candidates from the ground up. Their format intends time for the intern to learn and understand the work they are doing. Basic understanding of the industry in which they are working in is also covered through work, formal informational sessions, or one on one discussion with key people in the company. These sessions or discussions are common in many internships and are organized so that interns can gain the most from their experiences. The majority of actuarial internships offered to students are with Life and Health Insurance Companies, Property and Casualty Insurance Companies, and Consulting Companies.

Traditional Roles

Life and Health Insurance actuaries use mortality projections and data on the policyholders to statistically predict and manage the financial risk of insuring human mortality and morbidity. Morbidity is the incidence of a particular disease, while mortality is the incidence of death. Using huge data bases, numbers of experience studies are conducted by actuarial departments in order to price and reserve for their products accordingly. The objective is to competitively price their products prospectively in a way that will financially sustain the risks those products will incur over their lifetime and meet all legal obligations that such products have. These prices must also be legally adequate. For example, according to legislation, there are

certain aspects such as minimum reserves of a life or health insurance policy that must be standard in order for the plan to be allowed legally. In an internship served by Ball State student Heather Adams in 2002, first-hand experience was gained in creating Visual Basic code to assist a Life and Health Reinsurance Company's efforts. In Appendix A, Adams mentions how her technical skills were utilized when she had to teach herself visual basic to accomplish the tasks given to her. In Visual Basic, Adams was able to see a department outside Actuarial use her work. In order to make her program useful, her communication and teamwork skills were vital to the completion of her tasks.

Property and Casualty Insurance actuaries use data on policy holders to statistically estimate and manage the financial risk of insuring both personal and commercial lines of property and casualty insurance. Personal lines of property insurance are homeowner's insurance, auto insurance and related. Commercial lines include commercial property, commercial automobile insurance, worker's compensation, professional liability, general liability, and specialist liability. In an internship served by Ball State student James Smith in 2001, Smith gained experience as a reserving intern. The reserving actuaries are responsible for analyzing data so that they can project a total cost of the claims incurred by the company's policy holders. In Appendix B, Smith mentions that a main component of his internship was creating loss reports. Loss reports are reports that summarize how much the existing claims cost to date. Some loss reports also include different projections of how much additional loss the claims will incur based on the analysis of the actuarial department, or different departments such as claims or underwriting. The reports updated and eventually made by Smith were used by a number of departments within the company to carry out their duties. Smith began by simply updating previous ones with new information, and gained independence as the summer went on to create his own. Ability to pull the loss data successfully for each different report was gained.

Traditional actuarial roles exist within reinsurance companies. Both life and health insurance companies as well as property and casualty companies seek reinsurance. Respectively, reinsurance companies employ both kinds of actuaries. The products provided by reinsurance companies allow insurance companies to take on more risk without risking instability. Similar to how people buy insurance in case of a costly event, insurance companies can purchase insurance so that they are able to take on more risk. In the agreement of reinsurance, the primary insurance company is known as the ‘ceding’ company. By purchasing reinsurance, the ceding company is able to insure higher limits of risk because the reinsurance company takes on a portion of the financial loss. This also makes it so the ceding company has results that are more predictable because severe losses can be transferred. By sharing the risk, the insurance industry is able to be stable and reliable. Reinsurance ensure a quality of underwriting in the ceding companies they insure so that the reinsurance company’s own interests are protected.

Consulting companies are institutions that provide analysis and advice to companies. The expertise covers risk management in a number of arenas from Property & Casualty as well as risks associated with Mergers and Acquisitions. Many of them cover a broad range of services on a number of risks associated with the human capital, or the workforce of companies. These items include benefits, pensions, investments, mergers and acquisitions, talent management, risk and capital management. By offering these services to so many different kinds of companies over long periods of time, they also serve as experts when it comes to how to adapt to change. They are relied on by their clients to understand trends in the marketplace as well as changes in legislation that are relevant to their business. As Ball State student Keri Jennings mentions about her health management consulting internship in Appendix C,

“Rather than dealing with retirement benefits as a pension actuary would, health management actuaries at Hewitt deal with medical, dental, and prescription drug benefits.

With the recent introduction of Medicare Part D, there was plenty of extra work to be done.”

She mentions that a recent legislation change is directly affecting her work. As an intern, Jennings was involved with projects that were related to the decisions the firm’s clients were faced with including analysis of the costs of making changes to the existing plans. Jennings mentioned being involved with a number of short term projects. This is different than internships served for insurance companies that had one main project for the duration of the summer. This difference in experience is a reflection of the difference in pace of work between insurance and consulting firms.

A difference between the internships discussed above and ones that are more recent ones is that in today’s internships there is stronger emphasis placed on articulation and presentation skills. In more current internship experiences, public speaking skills are exercised at least once throughout the summer, and social outings with the office are more frequent and common. These recent changes are reflection of the growing complexity of the actuarial career. Being able to communicate effectively and network are ways to assure confidence in colleagues that an individual can apply their knowledge towards the initiatives of other projects. One can set themselves apart in a positive way by making themselves valuable in ways above and beyond what is average. By placing greater emphasis on these soft skills such as communication, teamwork, presentation skills, and networking, internships are now reflecting the demands being placed on actuaries by fields that are not necessarily insurance related. This 10-12 week extended interview allows the interns to show proficiency in a number of aptitudes, while growing their professional networks and developing soft skills.

My Internship Experience at a Life and Health Reinsurance Company

I started my internship with a life and health reinsurance company having little to no knowledge of Excel or how reinsurance companies worked. By the end of summer, I had worked in Excel every day and had many opportunities to have different facets of the reinsurance industry explained to me. Through weekly seminars, assignments, and the chance to ask unlimited questions and work on projects an amazing foundation to my industry knowledge was formed. I joined a pricing team's ongoing effort to help evaluate reinsurance pricing. They were in the process of recoding their data so that they could look at plan data by every five years of policyholder age instead of every ten. I learned that this would allow them to price more effectively because they had enough data to be able to analyze it at such detail. In order to complete my work, it was necessary to go through and compare the reinsurance contracts called treaties, the new system where data was to be looked at every five years used by the actuarial valuation department, as well as what the data universe held to make sure everything aligned with what was stated in the treaty. If I noticed there was a discrepancy, it was up to me to find hints as to where the inconsistency was so that the actuarial and IT departments could adjust code so that both pricing and valuating systems were using the correct numbers. My attention to detail and communication skills were vital to success.

There were a number of weekly occurrences at my internship including seminars, lunch and learns, and social activities. The weekly seminars were over different aspects of reinsurance and technical skills. Even though my work was in pricing, I was able to learn about what other interns were doing in valuation and more about the reinsurance industry in general. Both individual and group assignments were given on each lesson and at the end of the summer, we were quizzed. At lunch and learns, each of the interns had a specific person in the office to have lunch with and interview. These were very interesting because they gave us the opportunity to

make an impression on someone higher up in the company who we typically did not work with directly. Lastly, each week included a social event where we got to meet people from all around the office in an informal setting.

At the end of summer, each intern was to give a presentation on something that sparked their interest over the summer. I chose to give my presentation on holiday mortality. Using the resources available to me, I found that mortality does not increase on any of the national holidays among the insured population. However, I found in my data that the Ides of March showed an increase in deaths relative to the days in the season surrounding it year after year.

My Internship Experience at a Commercial Property and Casualty Company

During my internship at a commercial property and casualty company, I contributed to a reserve review for the Professional Liability Collateral Lines book, or segment, of insurance. In other words, I helped update a quarterly report that took into account the loss on claims that had occurred and new information made available since the last report came out on a segment of business. Collateral Lines include commercial auto, commercial property, general liability, and worker's compensation. Many clients with professional liability insurance were also interested in collateral lines. It made sense to include many of the clients from different industries who have professional liability insurance together when analyzing the behavior of their collateral lines because the claims among these clients behaved similarly. Even still, the book I was working with had a small amount of data. I learned a lot about how insurance companies evaluate small amounts of data, and even weighed the pros and cons of different credibility methods used to estimate the future reserves needed to see a claim until its closing. There were times during the progress of my review that we had meetings with other departments in order to exchange information that we were finding completing the review. For example, if there was a singular claim that was very severe and posing as an outlier in the data, the underwriters often had insight

as to how to estimate the reserves for that loss. My analytical and technical skills were used, as well as my teamwork and communication skills in order to complete my work. At the end of summer, I gave a presentation over what I had learned and found in my work.

Each week there were presentations that our colleagues would give over different aspects of the commercial property and casualty industry. As interns, we had opportunity to ask questions and were encouraged to follow up with the presenters if the material they covered showed up in our assigned work. Additionally, there were weekly social events with our colleagues. This allowed us to get to know them as well as the city throughout the summer.

Non-Traditional Roles

Unlike the traditional roles most readily available to intern and entry level actuarial students, non-traditional roles typically only become available to individuals with some actuarial experience. As mentioned at a presentation given by members of the Society of Actuaries at Ball State in 2013, campus guest Jim Miles said, “Twenty to thirty years ago, actuaries all did the same things. Today, we all do something different,” (University Outreach 2013). For the majority of the profession’s history, the role of an actuary included life insurance, reinsurance, general insurance, health insurance, death benefit superannuation (pensions), and investment and fund management (Stevenson). The risks that actuarial knowledge helped to manage were largely insurance risks. The terms ‘valuation’ and ‘pricing’ could accurately describe the work of the majority of actuaries. Early in an actuary’s career, little light is shed on the non-traditional roles, but fields outside insurance are noticing the value of actuarial skillsets.

These non-traditional roles include opportunities in banking and finance, enterprise risk management, environmental finance, defined contribution superannuation, wealth management and financial planning, social security, media effectiveness, data mining, and health financing. The growing momentum of actuarial demand in these fields is catching the attention of the

Society of Actuaries. They have created an Actuary of the Future task force, whose initiatives include,

- “1. Informing and educating non-traditional employers about the value of actuarial expertise.
2. Motivating actuaries to consider non-traditional roles.
3. Motivating those employers to use actuaries in the identified roles.
4. Assisting Society members in preparing for the new roles.”

The point of this task force is to make conscious effort to include the development of non-traditional roles in future endeavors of the Society. The breadth of non-traditional roles is growing in all directions, making it challenging, but crucial for it to be acknowledged in order for actuaries to be valued as professionals. According to the recommendation list compiled by the Actuary of the Future task force in Appendix D, failure to act, or ineffective action in the arena of non-traditional actuarial support could “impede the development of non-traditional opportunities for actuaries”. Furthermore, the value of actuaries as professionals could falter. By not responding to the growing demand in non-traditional roles, the growth in demand for actuarial skills could be hindered.

Greg Leonberger of Marquette Associates, a boutique investment consulting company is an example of an actuary filling a non-traditional role. He serves as the director of research and is responsible for asset allocation studies and capital markets research. In his role, he facilitates the coordination of the investment committee, research team and senior partners to form comprehensive and integrated market themes (Ang 2011). His background prior to having this position consisted of the actuarial exams and nine years of pension work with Hewitt and Associates; a consulting firm, and an Masters of Business Administration in analytic finance. In his own words,

“Halfway through my MBA program, I realized that I really wanted to be on the other side of the pension table, working with pension investments rather than the liabilities. I knew that I had a very good background for the switch given my experience in pension consulting and MBA concentration, so it then became an issue of finding the right opportunity. I was fortunate enough to land this position at Marquette Associates as the director of research and have since really enjoyed the chance to leverage my pension experience at Hewitt and academic background in quantitative finance,” (Ang 2011).

Leonberger was able to go beyond the traditional role and be valued for pursuing his interests.

As another example of a non-traditional actuarial role, Daniel Rachlis of Deloitte Consulting LLP serves as a data specialist master in Deloitte’s Health Care Actuarial Practice. In his role, his responsibilities encompass technology and data analytics relating to health care projects. With his interest in data, he has been a part of a number of projects ranging from helping school districts obtain Medicaid reimbursements to Health Care litigation consulting. He found his way to this position through, according to him, a love of reengineering data. “Since I was really good at crunching huge amounts of data and was doing a great deal of programming, I built my niche as the key liaison between the IT department and the actuarial department,” (Ang 2011). Starting at a health insurance company, Rachlis made his way to the consulting world and completed a Master’s in Information Systems Management before fulfilling his role at Deloitte. Additionally, he sees room for growth in non-traditional roles for actuaries, in Health Care Reform, Financial Markets, and Technology. In his opinion, “Technology is one of an actuary's strongest skill sets, and having seen technology grow so rapidly in these past 20 years, I believe that actuaries are at the forefront of data analytics and handling increasingly sophisticated data.”

Michael Trenk, of Alva Capital has served a number of non-traditional roles. Having always dreamed of being a great American entrepreneur, he claims to have gotten his start by

becoming an actuary first. His first career job was with Metropolitan Life, a life insurance company. Soon after fulfilling the rotational program at MetLife, he found himself in investment banking. Through a number of companies, he's had experience in advising pension plan sponsors and insurance companies on strategic asset allocation, he has worked on a quantitative fixed income research group, he has served as a structured derivatives product generalist, he's helped work on structured credit products, he developed new hedge fund derivative products business, and he's traded structured hedge fund derivatives. His educational experiences prior to filling these roles are a bachelor's degree in actuarial science, and Fellowship of the Society of Actuaries. On what drew him to actuarial science, he says,

"I was interested in mathematics from a very young age and became interested in business as a teenager. Actuarial science was a way to exploit a competitive advantage in business by becoming a "mathematical businessman." What sealed the deal for me was the availability of good jobs that paid automatic raises for passing exams."

Today, Trenk is in the process of starting up a long/short equity hedge fund called Alva Capital with business partners he has met throughout his career. To Trenk, actuarial science is serving as a prerequisite to being able to pursue his interests outside of the traditional roles.

A similarity among each of these actuaries that are now fulfilling non-traditional roles is that each of them pursued personal interests. Some pursued further education, and others did not. Each followed a different path and essentially, did what was fitting for them. They were able to transfer their skills to other fields and become preferable to work with by people who are not necessarily actuaries. Of course the exams were helpful, but so was their ability to make their skill sets known to those outside the industry they started in. Their success in their careers depended on their proficiency in communication, working on teams with different kinds of professionals, and adjusting to goals outside of the insurance risks. Leadership and soft skills

such as teamwork, presentation skills, and communication were used by these individuals to excel in areas that interested them. Without proficiency in said skills, their interest in other areas may not be articulated and their professional value would be limited.

As greater attention is being brought to the actuarial skillset, it would be unwise to forsake the opportunity at the university level. It is time the possibility of a non-traditional role later in one's career catches the attention of university students. While perfectly rewarding careers can result in traditional roles, there are indeed more opportunities to be sought after. There may be ways that university students can better gear themselves to become participants of this ever evolving field while in college. As mentioned, actuarial degrees are intensive and demanding. In just four years of undergraduate studies, it may be overwhelming to fathom what more students can do to prepare for their careers. For programs already so intensive, requiring more credit hours can be unrealistic. The rewarding aspect of preparing for these non-traditional roles for students is that they could be simply asking students to do more of what they like. Development of one's expertise in something they are interested in seems to be a key component in determining the non-traditional path an actuary may lead; perhaps an argument advocating value to less required credit hours in order to give students the option to pursue electives or interests in extracurricular activities.

Pursuing a Non-Traditional Role

When pursuing one's own interests, leadership and charisma can be built naturally. With the changing demands placed on the actuarial skillset, the spotlight is being placed on the number crunchers. These skills are becoming an expectation. According to Cindy Forbes, FSA, FCIA, the Executive Vice President and Chief Actuary at Manulife Financial, "... The complexity of [the actuarial field] has created a growing need for all actuaries to be better skilled in communications," (Actuary Connect 2012). A basic observation of publications and

testimonies from industry professionals reveals that many unanimously agree with Forbes, that communication is the vital foundation to the advancement of actuarial careers and the execution of both non-traditional and traditional roles. The actuarial skillset pulls from a variety of fields, so by finding a niche of expertise and the ability to communicate such expertise can result in a demand for one's leadership and in turn, a promising career. While non-traditional roles are not a requirement to a rewarding actuarial career, there are a number of opportunities for an actuary to branch out beyond their traditional role, and essentially it comes down to the individual.

Involvement with professional organizations such as Gamma Iota Sigma and local Actuarial Clubs is as crucial as it has ever been in the field of actuarial science. Having connections in a network is becoming a mobilizer when it comes to pursuing non-traditional roles. With the relatively small size of the actuarial profession, networking can be momentous.

“There are currently approximately 22,000 members of the Society of Actuaries and 5,000 members of the Casualty Actuarial Society. In comparison with the estimated 1.8 million accountants or even 600,000 doctors, the number of actuaries is fairly small in comparison. This lesser number of individuals pursuing an actuarial career is one of the main reasons that many actuaries believe that networking within the profession is so important” (Chapman 2011).

An individual can enhance their industry knowledge and develop the soft-skills that are necessary to succeed in a professional environment. While the specialized conferences are typically opportunities for experienced actuaries, there are opportunities that younger professionals should and can take advantage of in the meantime such as talking to everyone, getting involved with your alma mater, joining local clubs, and building a personal online brand. (Galecki 2011). The importance of building a network should not be understated especially if non-traditional roles are of interest.

Taking a Non-Traditional Role

Taking on a non-traditional role is not a requirement to reach a rewarding actuarial career. One can have a perfectly fulfilling career in solely traditional actuarial roles. However, non-traditional roles can serve as a perfect outlet to serve as a leader and expert in a field that may be more interesting to the individual than insurance risks. Exams are important, and so are building your network and your career as you take them. An actuarial career can truly be at its beginning as soon as the exams are completed. Exams can now serve as a prerequisite to a number of professions that may be more appealing to some candidates than the stereotypical number crunching. As young professionals it is important to be aware of such opportunities so they can build their skills and be ready to transfer them as their career demands. These opportunities not only solidify the already pristine job outlook that actuaries have, but also give variety to a field that used to be primarily pricing and valuating. More practically, the exams can be a pathway, and soft skills the means to a more individualized, and therefore rewarding career path. The greater demands placed on the actuarial skillset provide an exciting incentive besides insurance to develop individual interests and plow through those exams as effectively as possible.

Appendix A

Heather Adams on her internship experience

"In the summer of 2002, I worked at Swiss Re Life and Health America, in Fort Wayne, as an actuarial intern in the Pricing Department. My first assignment was to create an Excel-based macro to do some conversions for the Underwriting Department. I was given time to read a book about Visual Basic and teach myself how to use it. I met with underwriters to make sure my program fit their needs. I told my supervisor how I felt about each project I completed and he began to bring me the projects that he thought I would enjoy. My second macro project was to create a graphing program that gave a visual representation of two pricing models for comparison. This program was complex and I spent most of the summer working on it. I did some work assisting with pricing models. I also got to do an interesting concentration of risk project where I estimated the cities in the U.S. where the most risk would be for a military life policy reinsured by Swiss Re.

"We had regular lunches with people from actuarial students to the company's top executives to learn more about the reinsurance industry. There is a fitness center on site, as well as a half mile track around a pond out front where you can take a stroll on your lunch break. I used my housing stipend to rent a nice apartment five minutes from work. At the end of the summer everyone got a half day off work paid to go to a Fort Wayne Wizards baseball game."

Appendix B

James Smith on his internship experience

"This past summer I interned with The Hartford property and casualty insurance company in Hartford, CT. The area I worked in was Personal Lines Financial Consulting, which is actually located outside of their main offices in Hartford, in a nice town called Southington. We worked side by side with the reserving people, assisting them in determining if their reserve numbers were reasonably accurate. We also managed quarterly loss data and produced loss cost summary reports for all other areas of the company. It was often my responsibility to look up the most recent loss data, organize it into a formal report, and then send it out to those areas of the company that would be interested in the results. While most of these were simply updates of previous reports, one day I was asked by my supervisor to come up with a brand new report to help one of the departments analyze a recent drop in claim frequencies. After designing the new report and getting an approval from my supervisor, I sent it out to the department that had requested it. About an hour later, a manager from another department who had seen the summary report came by my desk and asked if I could produce a similar one for his department, which I thought was very exciting.

"In addition to the working experience, I was also given a full overview of the company. I and the other summer interns were given tours of every area of the company, including the data warehouse, the calling centers, the trading floor, and even executive row. We were also able to meet with the head managers and vice presidents of all the departments as well as the new chief actuary.

"During the final week of the internship we had to give presentations to the vice presidents of all the departments about the work we had done during the summer, which was also very exciting. Later that week we were also given the opportunity to interview for full time

employment. I have since received and accepted a full time position with The Hartford. My internship showed me the commitment The Hartford has to its actuarial student program and all of its employees. The rich history and vast resources of The Hartford put them far ahead of many insurance companies around the world, and I cannot wait to return and be a part of it.”

Appendix C

Kari Jennings on her internship experience

“I spent the summer of 2005 as an actuarial intern with Hewitt Associates in Lincolnshire, Illinois. Hewitt is a large consulting firm in the northwest suburbs of Chicago offering both pension and health management actuarial services to its clients. I was placed in the health management department where I spent the summer learning the ins and outs of the modern health care world and the role an actuary plays in that world. Rather than dealing with retirement benefits as a pension actuary would, health management actuaries at Hewitt deal with medical, dental, and prescription drug benefits. With the recent introduction of Medicare Part D, there was plenty of extra work to be done. As a result, I was able to take part in a variety of numerous projects. My largest projects dealt with pricing new medical and dental plan designs and comparing the effects of making certain changes to the existing plans. This was done by entering plan designs into Hewitt’s pricing model in order to compute the relative value of the new plan design to the old. I also took part in FAS 106 work, as well as many one-time smaller projects. Two of the shorter-term projects I found particularly interesting were an analysis of a client’s Disease Management Program as well as a cost analysis of another client’s implementation of a sabbatical program. As all of the work to be done required the use of Excel, I exercised my Excel skills daily, expanding my knowledge of the program’s capabilities. My internship experience at Hewitt proved to be extremely valuable because of the nature of the work I was given: it was challenging and significant to the firm. In addition to the projects I took part in, I was able to sit in on several conference calls with clients as well as weekly meetings with the health management team, both of which enhanced my experience and gave me a true taste of what working for an actuarial consulting firm would be like. Even as an intern, it was evident to me how much Hewitt valued their employees; as a result, I will be returning to Hewitt

to begin fulltime work as an actuarial student in the health management department in August of 2006.”

Appendix D:

Summary of Recommendations compiled by the Actuary of the Future Task Force (1991)

Section II: Summary of Recommendations

This Section summarizes the Task Force's specific recommendations.

1. **Recommendation #1:** The Society should develop career planning prototypes to enable individual actuaries to develop paths that lead from where they are today to the new opportunities. These prototypes should differentiate between the needs of "old FSA pathfinders," "new FSA entrepreneurs" and "student searchers."
2. **Recommendation #2:** The Society's basic and CE education processes should be reviewed and modified, if necessary, to provide the direction and support this plan requires. For example, the Society should use more "symposia" as a way to (1) "ride" emerging issues and (2) get our story out to the targeted non-traditional employers. Such symposia should be extensively marketed.
3. **Recommendation #3:** The Society's examination content, recruiting objectives and other supporting brochures and education and career recruiting material should be reviewed and revised, if necessary, to properly spotlight the potential for actuaries beyond the historic insurance, employee benefit and consulting environments.
4. **Recommendation #4:** The Society should refine and implement the suggestions herein for expanding the role of actuaries within traditional employers. This effort must be sensitive to the actions taken in Recommendations #5.
5. **Recommendation #5:** The Society should establish a crisis task force to both examine and respond to criticisms that actuaries often are not performing traditional functions with sufficient business perspective.

- Lack of immediate Society action on this front will impede the development of non-traditional opportunities for actuaries.
- Successful Society action will not only enhance the perceived (and real) value of the actuary, but also make expanding roles and responsibilities more natural.

6. **Recommendation #6:** The Society should charge an implementation task force to develop the desired relationships with targeted non-traditional employers and to prepare Society members for their new roles. The initial efforts should include, but not be limited to:

1. Designing and implementing marketing strategies to inform and educate non-traditional employers.
2. Designing and marketing seminars, programs and other Society efforts to support broadening our horizons.
3. Networking with other professional and business organizations.
4. Initiating actuarial research on identified key issues areas.

Recommendation #7: Seminars, programs, section agendas and other Society efforts should be carefully crafted and marketed, particularly in 1991-1993, to send messages consistent with the objectives related to expanding actuarial roles and opportunities.

Recommendation #8: The Society should work with universities, search firms and other centers of influence, both to (a) improve our understanding of how they see the needs of those employers and (b) communicate our capabilities and objectives to them.

Recommendation #9: The Society should implement a public relations effort, aimed at:

1. Educating SOA members about this broader potentials, providing an individual career planning perspective to guide them.

2. Dialoguing with current employers to obtain a clearer, first hand understanding regarding their negative perceptions about actuaries.
3. Educating targeted non-traditional employers about the value of actuarial skills in their business.

Recommendation #10: The Society should initiate and support white papers and research, targeted at establishing the actuarial profession as generalists in shaping and managing critical emerging issues. Examples of such emerging issues include the aging of society (long term care), reshaping medical care, and managing private and governmental financial guarantees.

Recommendation #11: The Society should establish a Financial Track in the examination system (including asset, liability and general financial management) to solidify and emphasize the broader financial principles essential to the future of the actuarial profession.

Recommendation #12: The Society needs to review ongoing efforts to develop principles of actuarial science to properly reflect and support the work in this document.

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